

## ATTORNEY DOCKET NO. 22118.0002U2 PATENT Page 1 of 2

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re A	pplication of:	)
James	E. Skinner	) Confirmation No. 2987
Application No.:10/767,861		) Group Art Unit: 3736
Filed:	January 29, 2004	)
For:	"IMPROVED METHOD AND SYSTEM FOR DETECTING AND/OR PREDICTING CEREBRAL ANOMALIES	) )

## INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450 NEEDLE & ROSENBERG, P.C. Suite 1000 999 Peachtree Street Atlanta, GA 30309

July 28, 2004

Sir:

Pursuant to the requirements of 37 C.F.R. § 1.56, submitted herewith on the accompanying Form PTO 1449 is a listing of documents known to Applicants and/or their attorneys. All of the documents cited were cited by or submitted to the Patent Office in Application No. 10/353,849, filed January 29, 2003, to which the present application claims priority. Pursuant to 37 C.F.R. § 1.98(d), copies of these documents are not enclosed.

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This Information Disclosure Statement is believed to be filed in a timely manner pursuant to 37 C.F.R. § 1.97(b)(3), in that a first Office Action on the merits of the present patent application has not yet been mailed to Applicants.

No fee is believed due; however, the Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 14-0629.

Respectfully submitted,

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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail ian envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 223131450, on the date show below.

Gregory J. Kirsch

Date

Modified Supplemental Form PTO-1445
U.S. DEPARTMENT OF COMMERCE **ATEORNEY DOCKET NO.: 22118.0002U2 APPLICATION NO. 10/767,861** . 7-80) PATENT AND TRADEMARK OFFICE PPLICANT: James E. Skinner LIST OF DOCUMENTS CITED BY APPLICANT (Use several sheets if necessary) FILING DATE: January 29, 2004 **GROUP: 3736 U.S. PATENT DOCUMENTS CLASS SUBCLASS FILING DATE IF FXAMINER** DOCUMENT NO. DATE NAME **INITIALS APPROPRIATE** 5,720,294 02/24/98 Skinner **A1** 01/20/98 A2 5,709,214 Skinner FOREIGN PATENT DOCUMENTS OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.) А3 "Low-Dimensional Chaos In Event-Related Brain Potentials," by Molnar et al., Internat. J. of Neuroscience, 1992, Vol. 66, pp 263-276. 1s The Heart Preadapted To Hypoxia? Evidence From Fractal Dynamics Of Heartbeat Interval Fluctuations At High A4 Altitude," Meyer et al., Integr. Physiol. Behav. Sci., 1998, Vol. 33, pp 9-40. "Cerebral Autonomic Regulation Underlying Cardiovascular Disease," Skinner, James E., Primer on the Autonomic Nervous **A5** System, 1996, Chapt. 29, pp 153-156. A6 "Introducing Chaos," Wolf, Stewart, Integrative Physiological and Behavioral Science, July - Sept. 1994, Vol. 29, No. 3, pp 203-204. **A7** "Estimating Fractal Dimension," Theiler, James, August 30, 1989. Takens, F., "On The Numerical Determination Of The Dimension Of An Attractor, Dynamical Systems And Bifurcations," **A8** Groninger, 1984, Vol. 1125 of Lecture Notes In Mathematics, Springer-Verlag, Berlin, 1985. "Lasers and brains: complex systems with low-dimensional attractors," Dimensions and Entropies in Chaotic Systems. 1985. Α9 pp 231-240. "Bohm's alternative to quantum mechanics," Albert, D.Z., Scientific American, May, 1994, pp 58-67. A10 A11 "Strange attractors in the dynamics of brain activity," Babloyantz, A., Complex Systems - operational approaches in neurobiology, physics, and computers, 1985, pp 116-122. A12 "Cognitive psychophysiology and human information processing," Donchin et al., Psychophysiology: systems, processes and applications, 1986, pp 244-267. A13 "The Dimension of Chaotic Attractors," Farmer et al., Physica D, Vol. 7D, Nos. 1-3, May, 1983, pp 153-180. A14 "Simulation of Chaotic EEG Patterns with a Dynamic Model of the Olfactory System," Freeman, Biological Cybernetics. Vol. 56, 1987, pp. 139-150. "Characterization of strange attractors," Grassberger et al., Physical Review Letters, 1983, Vol. 50, No. 5, pp 346-349. A15

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•	A16	"Direct Test for Determinism in a Time Series," Kaplan et al., Physical Review Letters, 1992, Vol. 68, No. 4, pp 427-430.
	A17	"Dimensional Analysis of Nonlinear Oscillations in Brain, Heart, and Muscle," Mayer-Kress et al., Mathematical Biosciences, 1988, 90, pp 155-182.
	A18	"Localized Measures for Non-Stationary Time-Series of Physiological Data," Mayer-Kress et al., Integrative Physiological and Behavioral Science," July-Sept 1994, Vol. 29, No. 3, pp 205-210.
	A19	"Testing the Determinism of EEG and MEG," Mühlnickel et al., Integrative Physiological and Behavioral Science, Vol. 29, No. 3, July-Sept 1994, pp 262-269.
	A20	"Geometry from a Time Series," Packard et al., 1980, The American Physical Society, pp 712-716.
	A21	"Long-range correlations in nucleotide sequences," Peng et al., Nature, 1992, Vol. 356, pp 168-170.
	A22	"Approximate entropy as a measure of system complexity," Pincus, Proc. Natl. Acad. Sci., Vol. 88, Mar 1991, pp 2297-2301.
	A23	"Dynamics of brain electrical activity," Rapp et al., Brain Topography, 1989, Vol. 2, pp 99-118.
	A24	"A Guide to Dynamical Analysis," Rapp, Integrative Physiological and Behavioral Science, 1994, Vol. 29, No. 3, pp 311-327.
	A25	"Reconstruction expansion as a geometry-based framework for choosing proper delay times," Rosenstein et al., Physica D, 1994, Vol. 73, pp 82-98.
	A26	"Chaos in Physiology," Rossler et al., Integrative Physiological and Behavioral Science, July-Sept 1994, Vol. 29, No. 3, pp 328-333.
	A27	"Discriminating Deterministic versus Stochastic Dynamics in Neuronal Activity," Schiff et al., Integrative Physiological and Behavioral Science, July-Sept 1994, Vol. 29, No. 3, pp 246-261.
	A28	"How brains make chaos in order to make sense of the world," Skarda et al., Cambridge University Press (1987), pp 161-195.
	<b>A2</b> 9	"Correlation Dimension of Heartbeat Intervals Is Reduced in Conscious Pigs by Myocardial Ischemia," Skinner et al., Circulation Research (1991), Vol. 68, No. 4, pp 966-976.
	A30	"On the Numerical Determination of the Dimension of an Attractor," Takens, 1984, Lecture Notes in Mathematics, 1125, pp 99-106.
	A31	"Spurious dimension from correlation algorithms applied to limited time-series data," Theiler, <i>Physical Review A</i> , 1986, Vol. 34, No. 3, pp 2427-2432.
	A32	"Testing for nonlinearity in time series: the method of surrogate data," Theiler et al., Physica D, Vol. 58, pp 77-94.
_	A33	"Anatomical and Physiological Substrates of Event-Related Potentials," Wood et al., Neurophysiology and Methodology, 1984, pp 681-721.
	A34	"Cryoblockade in limbic brain (amygdale) delays or prevents ventricular fibrillation following coronary artery occlusion in psychologically stressed pigs," Skinner et al., Circ. Res., Vol. 70, pp 600-606, 1992.
	A35	"Low-dimensional chaos maps learning in a model neuropil (olfactory bulb)," Skinner et al., Integrative Physiological and Behavioral Science, Oct-Dec 1992, Vol. 27, No. 4, pp 304-322.
	A36	"Chaotic brain activity," Elbert et al., Electroencephalogr Clin Neurophysiol Suppl, 1995, Vol. 44, pp 441-449.
	A37	"Is the Heart Preadapted to Hypoxia? Evidence from Fractal Dynamics of Heartbeat Interval Fluctuations at High Altitude (5,050 m)," Meyer et al., Integrated Physiological and Behavioral Science, Jan-Mar 1998, Vol. 33, No. 1, pp 9-40.
L		

•		
•	A38	"Stability of Heartbeat Interval Distributions in Chronic High Altitude Hypoxia," Meyer et al., Integrated Physiological and Behavioral Science, Oct-Dec 1998, Vol. 33, No. 4, pp 344-362.
	A39	"Event-related dimensional reductions of the primary auditory cortex of he conscious cat are revealed by new techniques for enhancing the non-linear dimensional algorithms", Skinner et al., International Journal of Psychophysiology, 1999, pp 21-35.
	A40	"Nonlinear dynamics of heart rate variability during experimental hemorrhage in ketamine-anesthetized rats," Skinner et al., American J Physiol Heart Circ Physiol, 2000, 297, pp1669-1678.
	A41	"The role of the thalamic reticular neurons in alpha- and gamma-oscillations in neocortex: a mechanism for selective perception and stimulus binding," Skinner et al., Acta Neurobiol. Exp., 2000, 60: pp 123-142.
	A42	"Response Cooperativity": A Sign of a Nonlinear Neocortical Mechanism for Stimulus-Binding During Classical Conditioning in the Act, Skinner et al., Nonlinear Phenomena in Biological and Physical Sciences, Indian National Science Academy, pp 224-248 (2000)
	A43	"Brain Involvement in Cardiovascular Disorders," Skinner, Behavioral Medicine in Cardiovascular Disorders, 1988, pp 229-253.
	A44	"The Chaotic Correlation Dimension of the Heartbeat is Reduced by Ischemia," Skinner et al., Biotech USA, Proceedings of the 6 <sup>th</sup> annual industry conference and exhibition, Oct 2-4, 1989, San Francisco, pp 425-434.
	A45	"Chaotic Attractors in a Model of Neocortex: Dimensionalities of Olfactory Bulb Surface Potentials Are Spacially Uniform and Event Related," Skinner et al., Springer Series in Brain Dynamics 2, 1989, pp 158-173.
	A46	"Chaos in the Heart: Implications for Clinical Cardiology," Skinner et al., Bio/Technology, Nov. 1990, Vol. 8, pp 1018-1024.
	A47	"Brain Control of Cardiovascular Dynamics," Skinner, Event-Related Brain Research, 1991, pp 270-283.
	A48	"Correlation Dimension of Heartbeat Intervals Is Reduced in Conscious Pigs by Myocardial Ischemia," Skinner et al., Circulation Research, Vol. 68, No. 4, April 1991, pp 966-976.
	A49	"Neurocardiology Shows that the Central, Not Peripheral, Action of Propranolol Reduces Mortality Following Acute Coronary Occlusion in the Conscious Pig," Skinner, <i>Integrative Physiological and Behavioral Science</i> , Apr-Jun 1991, Vol. 26, No. 2, pp 85-97.
	A50	"Correlation Dimension Changes of the EEG During the Wakefulness-Sleep Cycle," Molner et al., Acta Biochim. Biophys. Hung. 26 (1-4), 1991/92, pp. 121-125.
	A51	"Application of Chaos Theory to Biology and Medicine," Mitra, Integrative Physiological and Behavioral Science, Jan-Mar 1992, Vol. 27, No. 1, pp 39-53.
	A52	"Low-Dimensional Chaos Maps Learning in a Model Neuropil (Olfactory Bulb)," Mitra et al., Integrative Physiological and Behavioral Science, Oct-Dec 1992, Vol. 27, No. 4, pp 304-322.
	A53	"A reduction in the correlation dimension of heartbeat intervals precedes imminent ventricular fibrillation in human subjects," Skinner et al., American Heart Journal, 1993, Vol. 125, No. 3, pp 731-743.
	A54	"Neurocardiology Brain Mechanisms Underlying Fatal Cardiac Arrhythmias," Skinner, <i>Neurocardiology</i> , Vol. 11, No. 2, May 1993, pp 325-351.
	A55	"The Point Correlation Dimension of R-R Intervals Predicts Sudden Cardiac Death Among High-Risk Patients," Vybiral et al., Computers In Cardiology, 1993, IEEE Computer Society Press, pp 257-260.
	A56	"Forebrain Regulation of Cardiac Function Spectral and Dimensional Analysis of RR and QT Intervals," Negoescu et al., Integrative Physiological and Behavioral Science, Oct-Dec 1993, Vol. 28, No. 4, pp 331-342:
ш		

. ` `	A57	"Higher Cerebral Regulation of Cardiovascular and Respiratory Functions," Skinner et al., Principles and Practice of Sleep Medicine," Chapter 18, pp 231-251, 2d Ed. 1993.
	A58	"Chaos and Physiology: Deterministic Chaos in Excitable Cell Assemblies," Elbert et al., The American Physiological Society, Vol. 74, No. 1, Jan 1994, pp 1-47.
	A59	"Neurocardiology: How Stress Produces Fatal Cardiac Arrhythmias," Skinner, 1994, pp 195-209.
	A60	"The Point Correlation Dimension: Performance with Nonstationary Surrogate Data and Noise," Skinner et al., Integrative Physiological and Behavioral Science, July-Sep 1994, Vol. 29, No. 3, pp 217-234.
	A61	"Low-dimensional Chaos in Biological Systems," Skinner, Bio/Technology, Vol. 12, June 1994, pp 596-600.
	A62	"What Have We Learned and Where Are We Going?," (Postscript), Integrative Physiological and Behavioral Science, July-Sep 1994, Vol. 29, No. 3, pp 234-237.
	A63	"The Role of the Central Nervous System in Sudden Cardiac Death: Heartbeat Dynamics in Conscious Pigs during Coronary Occlusion, Psychologic Stress and Intracerebral Propranolol," Skinner, <i>Integrative Physiological and Behavioral Science</i> , Oct-Dec 1994, Vol. 29, No. 4, pp 355-361.
	A64	"Correlation dimension changes accompanying the occurrence of the mismatch negativity and the P3 event-related potential component," Molnar et al., Electroencephalography & Clinical Neurophysiology, 1995, pp 118-126.
	A65	"Application of Chaos Theory to a Model Biological System: Evidence of Self-Organization in the Intrinsic Cardiac Nervous System," Skinner et al., Integrative Physiological and Behavioral Science, Apr-June 1996, Vol. 31, No. 2, pp 122-146.
	A66	"Heart Rate Variability in the Human Transplanted Heart: Nonlinear Dynamics and QT vs RR-QT Alterations during Exercise Suggest a Return of Neurocardiac Regulation in Long-term Recovery," Meyer et al., Integrative Physiological and Behavioral Science, Oct-Dec 1996, Vol. 31, No. 4, pp 289-305.
	A67	"Dynamical Analysis of Heartbeat Interval Time Series After Cardiac Transplantation," Meyer et al., Fractals in Biology and Medicine (1997), pp 139-151.
	A68	"Low-Dimensional Chaos in Large Conductance Ca-Activated K-Channel Gating Kinetics," Meyer et al., Fractals in Biology and Medicine (1997), pp 152-164.
	A69	"New Nonlinear Algorithms for Analysis of Heart Rate Variability: Low-Dimensional Chaos Predicts Lethal Arrhythmias," Nonlinear Analysis of Physiological Data, Skinner et al., 1998, pp 129-166.
	A70	"Low-dimensional Chaos in a Simple Biological Model of Neocortex: Implications for Cardiovascular and Cognitive Disorders," Skinner et al., An International Perspective on Self-regulation and Health, 1989, pp 1-29, 1991, pp 95-117.
EXAMINER:		DATE CONSIDERED:
EXAMINER: conformance	Initial if and not	reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in considered. Include copy of this form with next communication to applicant.